

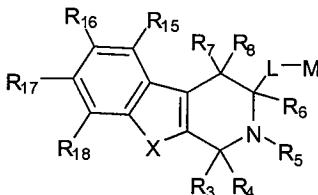
## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

### Listing Of Claims

1-9. (Cancelled)

10. (Currently amended). A compound ~~comprising~~ of the formula:



wherein

~~R<sub>3</sub> and R<sub>4</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group, or where R<sub>3</sub> and R<sub>4</sub> are taken together to form a ring, in each case unsubstituted or further substituted through available valencies;~~

~~R<sub>5</sub> and R<sub>6</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group, or where R<sub>5</sub> and R<sub>6</sub> are taken together to form a 3, 4, 5, 6, 7 or 8 membered ring, in each case unsubstituted or further substituted through available valencies;~~

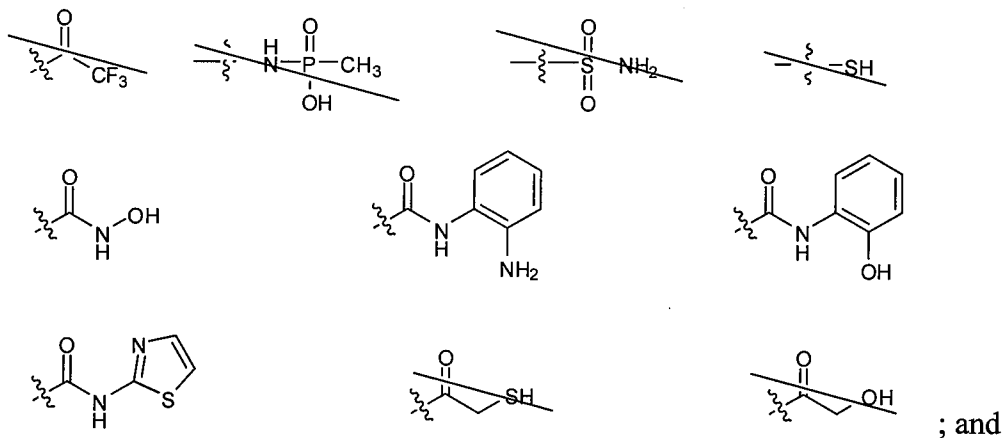
~~R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a~~

~~thiocarbonyl group, or where R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring, or where R<sub>6</sub> and R<sub>7</sub> are taken together to form a 3, 4, 5, 6, 7 or 8 membered ring, in each case unsubstituted or further substituted through available valencies;~~

R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub> and R<sub>18</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, ~~except where R<sub>15</sub> and R<sub>16</sub>, R<sub>16</sub> and R<sub>17</sub>, and/or R<sub>17</sub> and R<sub>18</sub> are taken together to form a 3, 4, 5, 6, 7 or 8 membered ring, in each case unsubstituted or further substituted through available valencies;~~

X is selected from the group consisting of O, S, and NR<sub>14</sub>, where R<sub>14</sub> comprises a moiety ~~attached to the nitrogen is~~ selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group, ~~in each case unsubstituted or further substituted through available valencies;~~

M is selected from the group consisting of:



L is a leader group moiety separating the M substituent from the carbon ring atom alpha to L, wherein the number of backbone atoms of the leader group moiety separating the M substituent from the carbon ring atom alpha to L is between 3 and 12.



The image displays a collection of chemical structures, including monomers and polymers, arranged in two columns. The structures are as follows:

- Top Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Top Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Second Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Second Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Third Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Third Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Fourth Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Fourth Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Fifth Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Fifth Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Sixth Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Sixth Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Seventh Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Seventh Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Eighth Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Eighth Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Ninth Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Ninth Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.
- Tenth Row Left:** A monomer consisting of a benzene ring with a vinyl group ( $-CH=CH_2$ ) attached to one of its carbons.
- Tenth Row Right:** A polymer chain consisting of a repeating unit of a diene, represented by a zigzag line with double bonds.

R<sub>23</sub> is (C<sub>1-10</sub>)alkyl.

16. (Currently amended). A compound according to claim 10, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents ~~where the moiety attached to the ring carbon is a substituted or unsubstituted consisting of~~ C<sub>1</sub>-C<sub>10</sub> alkyl, aminoalkyl, ~~or and~~ oxaalkyl.

17. (Currently amended). A compound according to claim 10, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is ~~selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted~~ selected from the group consisting of branched C<sub>1</sub>-C<sub>10</sub> alkyl, aminoalkyl, ~~or~~ and oxaalkyl.

18. (Currently amended). A compound according to claim 17, wherein the C<sub>1</sub>-C<sub>10</sub>alkyl, aminoalkyl, or oxaalkyl ~~further comprises~~ is substituted with a substituent selected from the group consisting of an alkyl, aromatic ring, cyano group, halogen, and carbonyl group.

19. (Currently amended). A compound according to claim 17, wherein the C<sub>1</sub>-C<sub>10</sub> alkyl, aminoalkyl, or oxaalkyl ~~further comprises a substituted or unsubstituted~~ is substituted with an aromatic ring.

20. (Currently amended). A compound according to claim 10, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is ~~selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted~~ an aromatic ring.

21. (Currently amended). A compound according to claim 10, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is ~~selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted~~ a phenyl ring.

22. (Currently amended). A compound according to claim 10, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is ~~selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted~~ is a heteroaryl.

23. (Currently amended). A compound according to claim 10, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is ~~selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted~~ a heteroaryl selected from the group consisting of furan-, thiofuran, pyrrole, pyrazole, isoimidazole, triazole, isoxazole, oxazole, thiazole, isothiazole, oxadiazole,

oxatriazole, pyridine, pyridazine, pyrimidine, pyrazine, triazine, benzofuran, isobenzofuran, benzothiofuran, isobenzothiofuran, indole, benzodioxolane, isobenzazole, quinoline, isoquinoline, cinnoline, quinazoline, naphthyridine, and pyridopyridine.

24. (Withdrawn). A compound according to claim 10, wherein  $R_3$  and  $R_4$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

25. (Withdrawn). A compound according to claim 10, wherein  $R_3$  and  $R_4$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 member alicyclic ring.

26. (Currently amended). A compound according to claim 10, wherein at least one of  $R_3$  and  $R_4$  is selected from a group of substituents ~~where the moiety attached to the ring carbon is selected from the group~~ consisting of an aldehyde, amide, ester, ketone, and carboxylic acid; ~~each unsubstituted or further substituted through available valencies.~~

27. (Withdrawn). A compound according to claim 10, wherein  $R_5$  and  $R_6$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

28. (Withdrawn). A compound according to claim 10, wherein  $R_5$  and  $R_6$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered alicyclic ring.

29. (Withdrawn). A compound according to claim 10, wherein  $R_6$  and  $R_7$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

30. (Withdrawn). A compound according to claim 10, wherein  $R_6$  and  $R_7$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered alicyclic ring.

31. (Withdrawn). A compound according to claim 10, wherein  $R_7$  and  $R_8$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

32. (Withdrawn). A compound according to claim 10, wherein  $R_7$  and  $R_8$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered alicyclic ring.

33. (Withdrawn). A compound according to claim 10, wherein  $R_7$  and  $R_8$  are taken together to form an imine having a substituent  $R_9$  on the imine nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, and sulfonylamino, each unsubstituted or further substituted through available valencies.

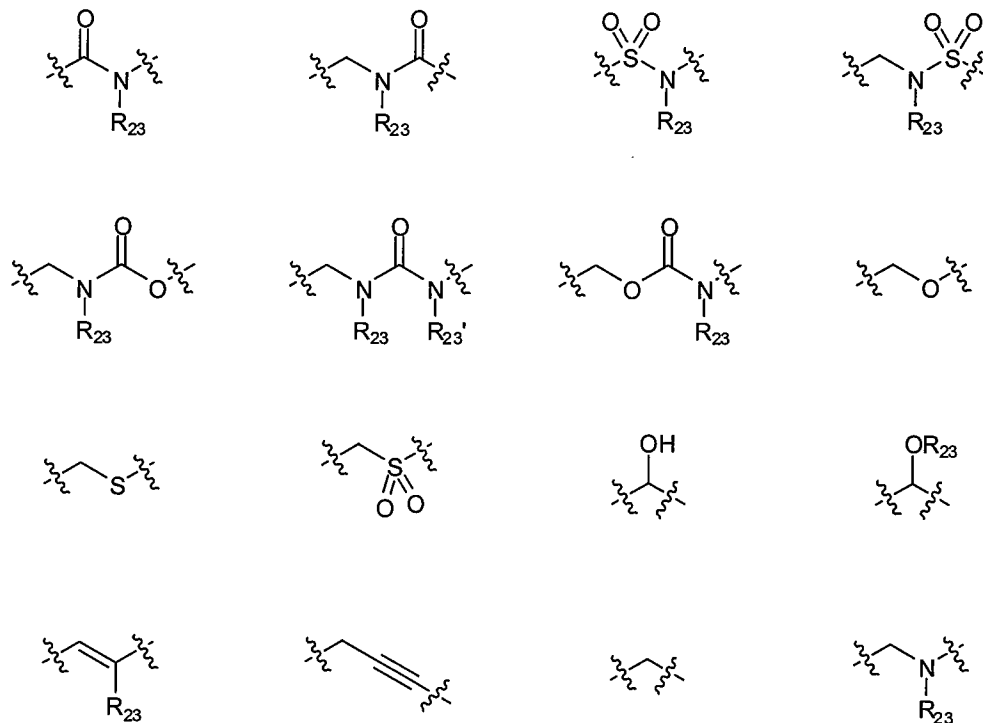
34. (Withdrawn). A compound according to claim 10, wherein  $R_7$  and  $R_8$  are taken together to form an alkene substituent having the formula  $=CR_{10}R_{11}$  where  $R_{10}$  and  $R_{11}$  are each independently selected from a group of substituents consisting of hydrogen, alkyl, aryl, alkylamino, arylamino, sulfonylamino, a carbonyl group, thiocarbonyl, and sulfonyl or where  $R_{10}$  and  $R_{11}$  are taken together to form an alkene, each unsubstituted or further substituted through available valencies.

35. (Withdrawn). A compound according to claim 10, wherein  $R_7$  and  $R_8$  are taken together to form an alkene substituent having the formula  $=CR_{10}R_{11}$  where  $R_{10}$  and  $R_{11}$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, each unsubstituted or further substituted through available valencies.

36. (Withdrawn). A compound according to claim 35 wherein  $R_{10}$  and  $R_{11}$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered alicyclic ring.

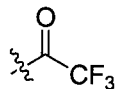
37 (Cancelled).

38. (Withdrawn). A compound according to claim 10, wherein a portion of L that is attached to the carbon ring atom alpha to L comprises a moiety selected from the group consisting of:

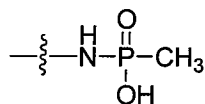


where  $\text{R}_{23}$  is a  $\text{C}_{1-10}$  alkyl.

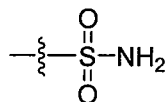
39. (Withdrawn). A compound according to claim 10, wherein M is



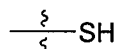
40. (Withdrawn). A compound according to claim 10, wherein M is



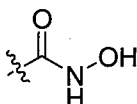
41. (Withdrawn). A compound according to claim 10, wherein M is



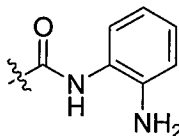
42. (Withdrawn). A compound according to claim 10, wherein M is



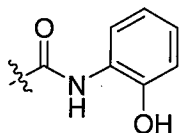
43. (Previously presented). A compound according to claim 10, wherein M is



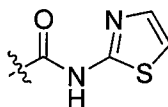
44. (Previously presented). A compound according to claim 10, wherein M is



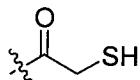
45. (Previously presented). A compound according to claim 10, wherein M is



46. (Previously presented). A compound according to claim 10, wherein M is

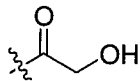


47. (Withdrawn). A compound according to claim 10, wherein M is





48. (Withdrawn). A compound according to claim 10, wherein M is

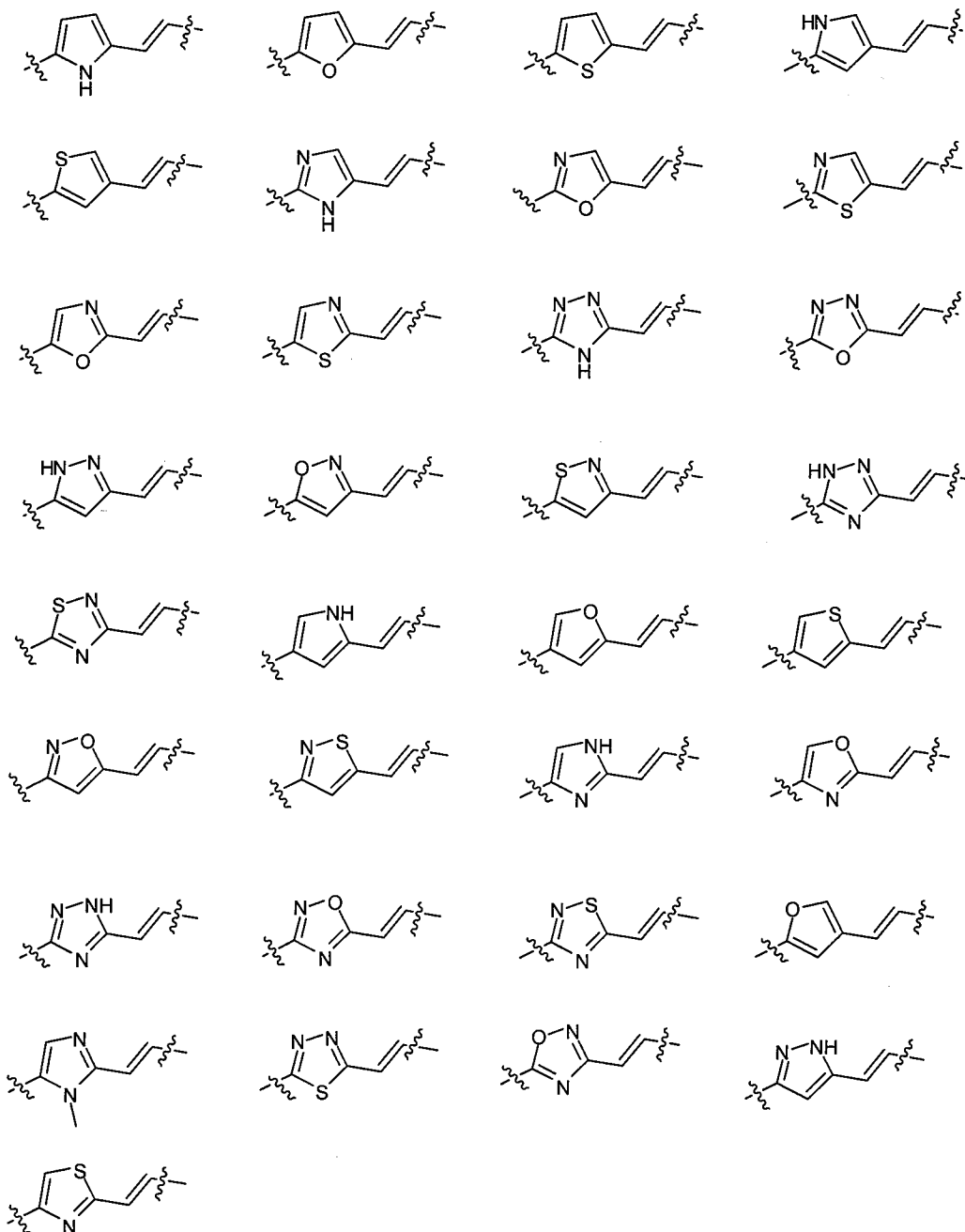


49. (Withdrawn). A compound according to claim 10, wherein the number of backbone atoms of the leader group moiety separating the M substituent from the carbon ring atom alpha to L is between 3 and 9.

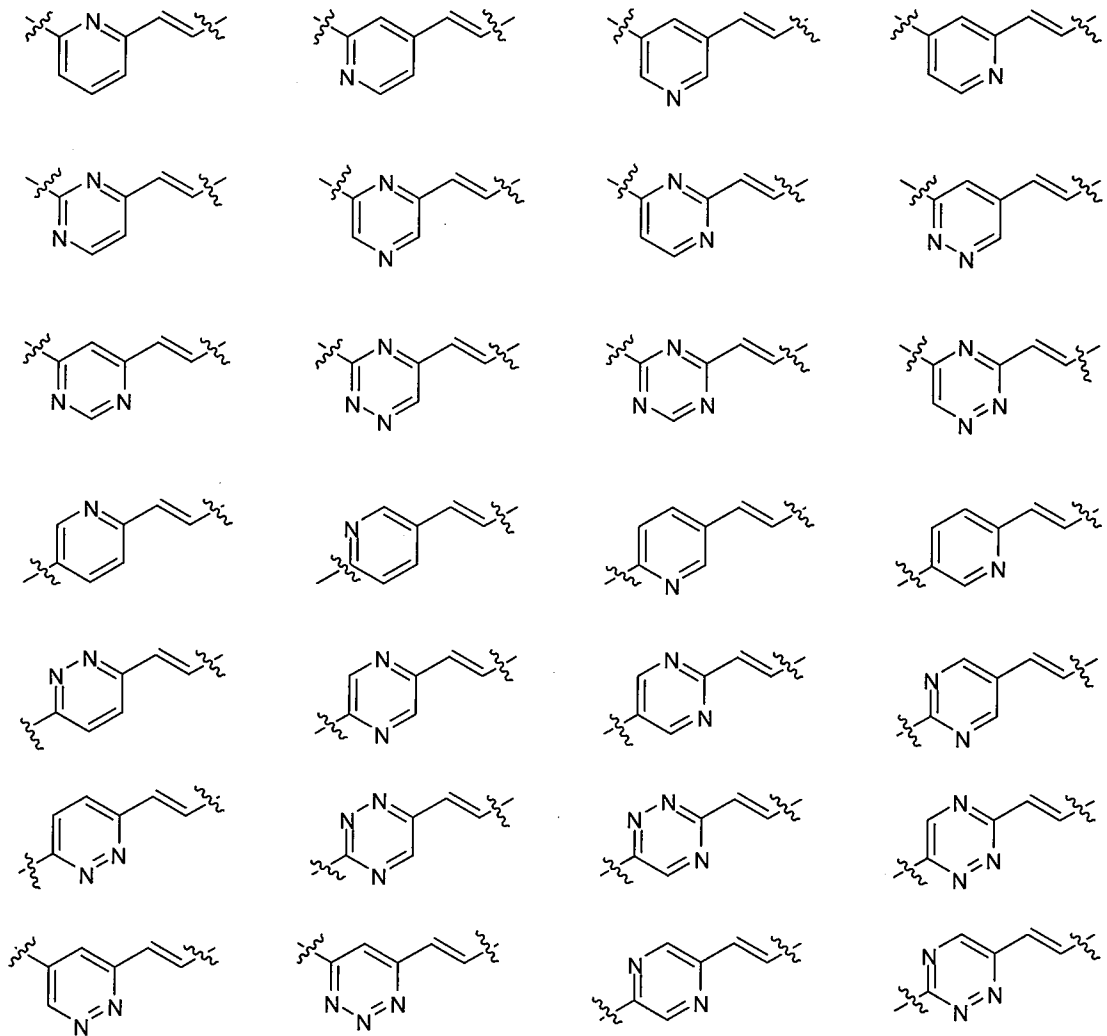
50. (Withdrawn). A compound according to claim 10, wherein the number of backbone atoms of the leader group moiety separating the M substituent from the carbon ring atom alpha to L is between 4 and 8.

51-54. (Cancelled).

55. (Withdrawn) A compound according to claim 10, wherein a portion of the backbone atoms of L are substituted to form a member of the group consisting of

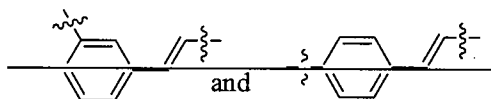


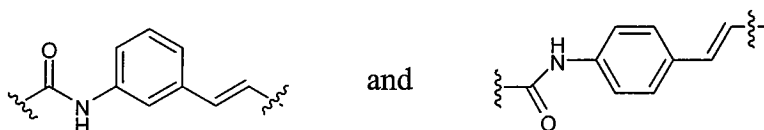
56. (Withdrawn) A compound according to claim 10, wherein a portion of the backbone atoms of L are substituted to form a member of the group consisting of



57-64. (Cancelled).

65. (Currently amended). A compound according to claim 10, wherein L ~~a portion of L~~ that is attached to M is selected from the group consisting of





66. (Cancelled)

67. (Withdrawn). A compound according to claim 10, wherein a portion of the backbone atoms of L forms a member selected from the group consisting of  $-(CH_2)_n-$ , where n is an integer from 1 to 10;  $-CH(CH_3)-$ ,  $-CH(CH_3)CH_2-$ ,  $-CH_2CH(CH_3)-$ ,  $-CH(CH_3)CH_2CH_2-$ ,  $-CH_2CH(CH_3)CH_2-$ ,  $-CH_2CH_2CH(CH_3)-$ ,  $-CH(CH_3)CH_2CH_2CH_2-$ ,  $-CH_2CH(CH_3)CH_2CH_2-$ ,  $-CH_2CH_2CH(CH_3)CH_2-$ ,  $-CH_2CH_2CH_2CH(CH_3)-$ ,  $-CH(CH_3)CH_2CH_2CHCH_2-$ ,  $-CH_2CH(CH_3)CH_2CH_2CH_2-$ ,  $-CH_2CH_2CH(CH_3)CH_2CH_2-$ ,  $-CH_2CH_2CH_2CH(CH_3)CH_2-$ ,  $-CH_2CH_2CH_2CH_2CH(CH_3)-$ ,  $-CH(CH_2CH_3)-$ ,  $-CH(CH_2CH_3)CH_2-$ ,  $-CH_2CH(CH_2CH_3)-$ ,  $-CH(CH_2CH_3)CH_2CH_2-$ ,  $-CH_2CH(CH_2CH_3)CH_2-$ ,  $-CH_2CH_2CH(CH_2CH_3)-$ ,  $-CH(CH_2CH_3)CH_2CH_2CH_2-$ ,  $-CH_2CH(CH_2CH_3)CH_2CH_2-$ ,  $-CH_2CH_2CH(CH_2CH_3)CH_2-$ ,  $-CH_2CH_2CH_2CH(CH_2CH_3)CH_2-$ ,  $-CH(CH_2CH_3)CH_2CH_2CH_2CH_2-$ ,  $-CH_2CH(CH_2CH_3)CH_2CH_2CH_2-$ ,  $-CH_2CH_2CH_2CHCH(CH_2CH_3)-$ ,  $-CH=CH-$ ,  $-CH=CHCH_2-$ ,  $-CH_2CH=CH-$ ,  $-CH=CHCHCH_2-$ ,  $-CH_2CH=CHCH_2-$ ,  $-CH_2CH_2CH=CHCH_2-$ ,  $-CH=CHCH_2CH_2CH_2-$ ,  $-CH_2CH=CHCH_2CH_2-$ ,  $-CH_2CH_2CH=CHCH_2-$ ,  $-CH_2CH_2CH_2CH=CHCH_2-$ ,  $-CH_2CH_2CH_2CHCH=CH-$ ,  $-C(CH_3)=CH-$ ,  $-CH=C(CH_3)-$ ,  $-C(CH_3)=CHCH_2-$ ,  $-CH=C(CH_3)CH_2-$ ,  $-CH=CHCH(CH_3)-$ ,  $-CH(CH_3)CH=CH-$ ,  $-CH_2C(CH_3)=CH-$ ,  $-CH_2CH=C(CH_3)-$ ,  $-CH=CHCH=CH-$ ,  $-CH=CHCH=CHCH_2-$ ,  $-CH_2CH=CHCH=CH-$ ,  $-CH=CHCH_2CH=CH-$ ,  $-CH=CHCH=CHCH_2CH_2-$ ,  $-CH=CHCH_2CH=CHCH_2-$ ,  $-CH=CHCH_2CH_2CH=CH-$ ,  $-CH_2CH=CHCH=CHCH_2-$ ,  $-CH_2CH=CHCH_2CH=CH$ ,  $-CH_2CH_2CH=CHCH=CH-$ ,  $-C(CH_3)=CHCH=CH-$ ,  $-CH=C(CH_3)CH=CH-$ ,  $-CH=CHC(CH_3)=CH-$ ,  $-CH=CHCH=C(CH_3)-$ ,  $-C\equiv C-$ ,  $-C\equiv CCH_2-$ ,  $-CH_2C\equiv C-$ ,  $-C\equiv CCH(CH_3)-$ ,  $-CH(CH_3)C\equiv C-$ ,  $-C\equiv CCH_2CH_2-$ ,  $-CH_2C\equiv CCH_2-$ ,  $-CH_2CH_2C\equiv C-$ ,  $-C\equiv CCH(CH_3)CH_2-$ ,  $-C\equiv CCH_2CH(CH_3)-$ ,  $-CH(CH_3)C\equiv CCH_2-$ ,  $-CH_2C\equiv CCH(CH_3)-$ ,  $-CH(CH_3)CH_2C\equiv C-$ ,

-CH<sub>2</sub>CH(CH<sub>3</sub>)C≡C-, -C≡CCH=CH-, -CH=CHC≡C-, -C≡CC≡C-, -C≡CCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>-,  
-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>C≡C-, -C≡CCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>-, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>C≡C-, -C≡CCH=CHCH=CH-,  
-CH=CHC≡C-CH=CH-, -CH=CHCH=CHC≡C-, -C(CH<sub>3</sub>)=CHC≡C-, -CH=C(CH<sub>3</sub>)C≡C-,  
-C≡CC(CH<sub>3</sub>)=CH-, and -C≡CCH=C(CH<sub>3</sub>)-.